
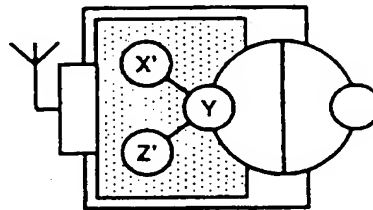
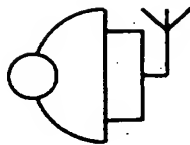


XP-002106312

1394 Wireless Bridge with Virtual Bus

P.D.	09-06-98	
P.	Complete	



A Solution to Wireless Connections in Multi-Bus Network

Takashi Sato
Philips Research Briarcliff



PHILIPS

Houl 12/28W
Houl 12/40
Houl 12/24

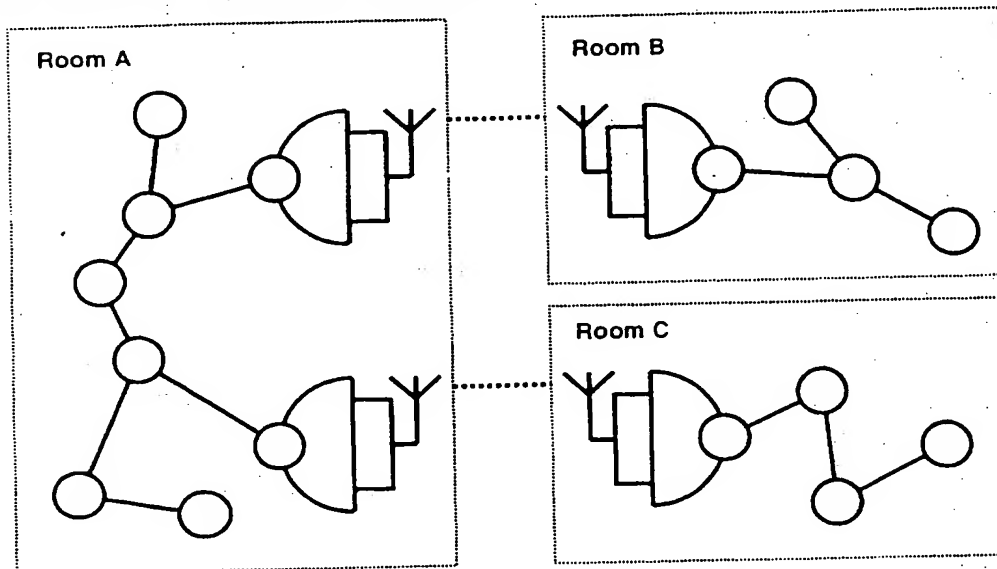
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1

Limitations - Dumb Wireless 2-Portal Bridge

$2(n - 1)$ Wireless Terminals are required to connect n buses together



Expensive!

Non-User-Friendly!



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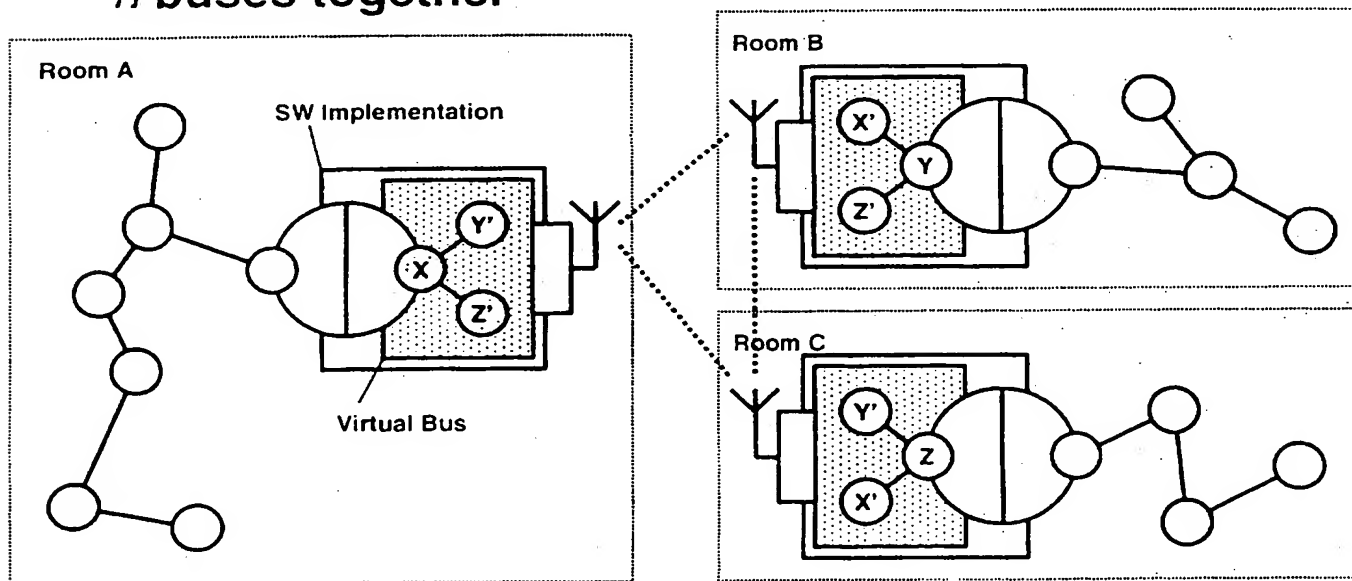
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Solution - Wireless Bridge with Virtual Bus

Only n Wireless Terminals are required to connect n buses together



Less Expensive! User-Friendly!



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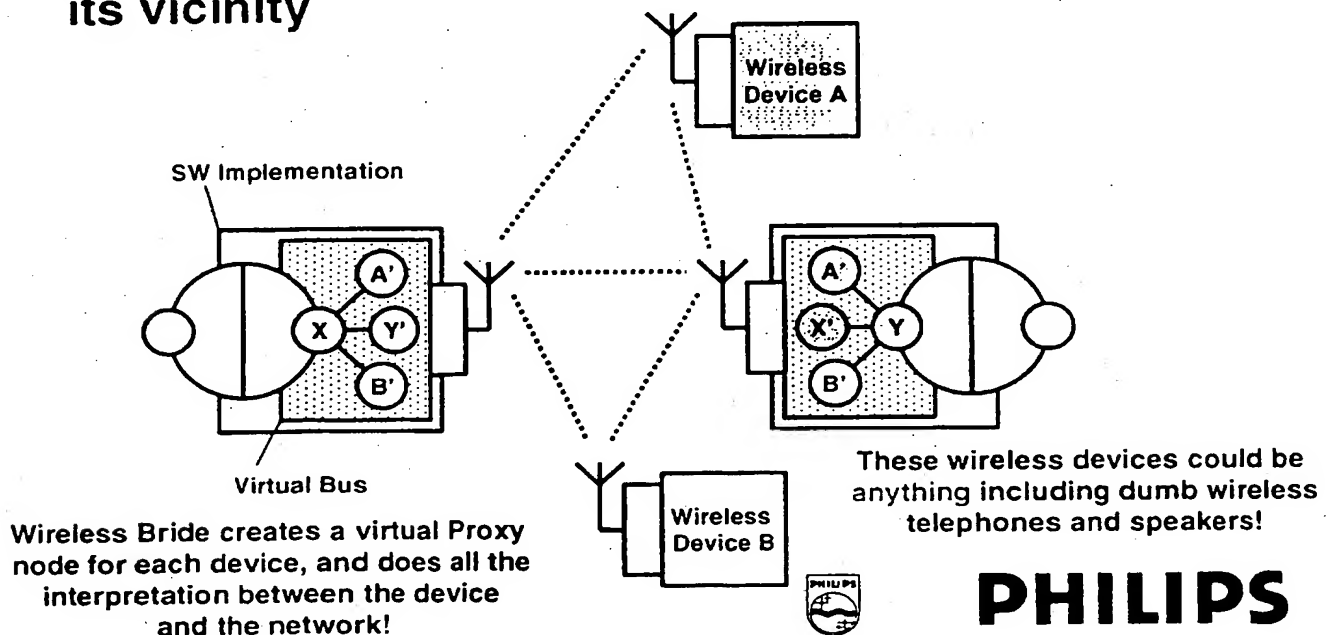
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Flexibility - Wireless Bridge with Virtual Bus

Wireless Bridge dynamically adjust it's Virtual Bus model, according to the wireless devices in its vicinity



Wireless Bridge creates a virtual Proxy node for each device, and does all the interpretation between the device and the network!

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Advantages - Wireless Bridge with Virtual Bus

Only 2-Portal Bridge Model Needed

More Intuitive - One Bridge per Room (or Bus)

- **Less Cost - Less Number of Devices in Network**
Dynamically Scalable - Can Connect Any Number of Buses or Individual Wireless Devices to The Network

Flexible - Can Connect Any Number of Buses or Individual Wireless Devices to The Network

- **Comparable HW Complexity - Comparable to Dumb Wireless 2-Portal Bridge**



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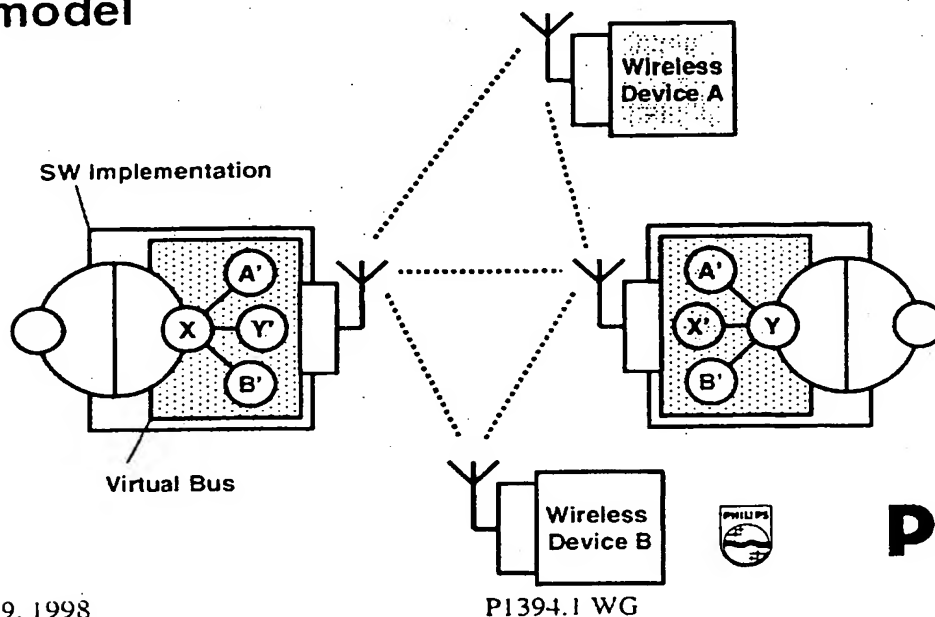
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Conclusion

- **Wireless Bridge with Virtual Bus provides Maximum Flexibility and Expandability to The Network without needing a multi-portal bridge model**

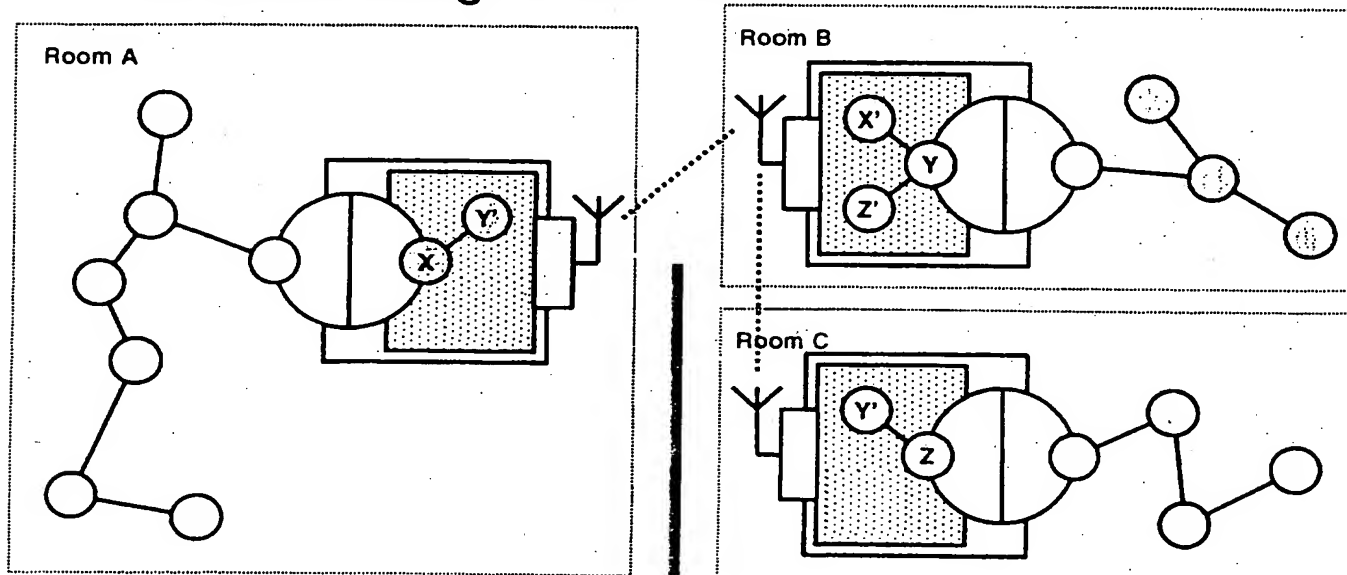


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Considerations - Wireless Bridge with Virtual Bus

What if not all wireless terminals are communicating to one another?



Is this a problem? Let's think about it!



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Considerations - Wireless Bridge with Virtual Bus

- **What if not all wireless terminals are communicating to one another?**
 - Can Phy ID be non-contiguous?
 - Does each Bridge Portal have to support 64-bit NODE_ENTRY Register to identify existing nodes on the local bus?
 - Can Virtual Phy ID of a wireless device can be different in each Viutrual Bus?
 - Will it be a problem if a wireless device is represented differently in each Virtual Bus?
 - Can each Wireless Bridge create a Virtual Bus as it sees it?
 - more questions?



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